

City of San Diego
Greenhouse Gas Emission Inventory

	City of San Diego Community					City of San Diego Operations			
Year	1990		2004			1990		2004	
Population	1, 110,600		1,291,700			Employees: 10,200		Employees: 12,200	
Avg. weekday VMT	28,200,800		38,362,000						
	GHG tons per year		GHG tons per year			GHG tons per year		GHG tons per year	
Waste	742,100		122,100			57,100		26,500	
Trans	6,127,300		7,864,800			28,200		7,900	
Energy	Res	1,781,200	Res	2,577,700		Bldgs	39,500	Bldgs	95,800
	Com	1,431,100	Com	2,972,000		St. Lights	11,200	St. Lights	12,000
	Ind	1,576,700	Ind	1,610,200		Water/sewage	42,000	Water/sewage	18,600
	TOTAL	4,789,000	TOTAL	7,159,800		TOTAL	92,600	TOTAL	125,300
Total CO2	11,658,400		15,146,700			177,900		159,700	
15% reduction goal			9,909,300					151,200	
CO2 Reduction for Target			30% INCREASE 5,115,300 Tons remaining					10% REDUCTION 8,500 Tons remaining	

Overview

The data for “Community” includes the City’s operations, which is also broken out separately. As is commonly the case, the municipal operations accounts for less than 2% of the community’s greenhouse gas emissions (GHG) for 1990.

Analysis of Community Data

Snapshot: Difference between 1990 and 2004

Population -	16% increase
Overall GHG emissions-	30% increase
Vehicle Miles Traveled-	36% increase
Transportation-	28% increase
Residential Energy-	45% increase

Percentage from each sector:	<u>1990</u>	<u>2004</u>
Waste-	6%	1%
Transportation-	53%	52%
Energy-	41%	47%

The 30% increase in GHG emissions in the community is not surprising based on the 16% population growth and the daily vehicle miles traveled (VMT) increase of 36%. The transportation sector contributes approximately 52% of the community’s total GHG. Per capita fuel use increased about 10%.

The GHG from energy use has increased in all three sectors: residential, commercial and industrial. The residential sector has increased nearly 45%, the commercial sector increased by nearly 108%, and the industrial sector has had the lowest increase with only 2%. Per capita energy use increased about 25%.

The reduction in GHG emissions generated from solid waste is due to the methane recovery programs that the City began in the mid-1990. Through a public-private partnership adopted in 1997 by City ordinance, Minnesota Methane, LLC and NEO Corporation have a collaborative responsibility to extract methane from the landfill and convert it to energy. The methane recovery is approximately 80% of the total methane available in the landfill.

Analysis of City Operations Data

Snapshot: Difference between 1990 and 2004

Employees-	20% increase
Overall GHG emissions-	10% DECREASE
Transportation-	72% DECREASE
Energy (buildings)-	142% increase

Percentage from each sector:	<u>1990</u>	<u>2004</u>
Waste-	32%	17%
Transportation-	16%	5%
Energy-	52%	78%

City operations have reduced GHG emissions by 10% below 1990 levels. This decrease has occurred even in light of a 20% increase in the number of City employees between 1990 and 2004. As the data illustrates, the most significant GHG decrease is due to methane recovery at the landfills and the sewage treatment plant. It is important to note that methane has more than 23X the GHG potential as Carbon.

Even though the energy used per square foot for lightening and HVAC-systems has significantly decreased, the number of buildings in use for City administration and operations has increased. Additionally, the energy-intensity of each office due to computers, printers, and other technical equipment requiring electricity was greater in 2004 than it was in 1990. The consequence is that GHG associated with energy in buildings is 142% more. Not reflected in those numbers are improvements that came online after 2004, such as solar installations at City sites and other technologies that successfully reduce the amount of energy taken from the grid.

GHG associated with the City's fleet has decreased 72% between 1990 and 2004. In the early 1990, all of the City's medium duty vehicles were gasoline powered, including vehicles between 14,000 gross vehicle weight (GVW) and 33,000 GVW. Additionally, chassis selection in the medium duty range was limited. For this reason, larger trucks than necessary were frequently purchased because there were no alternatives. This resulted in lower fuel economy and greater fuel emissions. Beginning in mid-1990, truck manufacturers introduced several new

chassis selections that made it easier to match the correct size truck to the minimum payload requirement, and the City's Vehicle Fleet Operations made a concerted effort to purchase "right-sized" trucks. The second contributing factor for GHG reductions was Fleet Operations' requirement that all medium duty truck replacements be powered by more fuel-efficient diesel engines instead of gasoline. The City continues to research and use cleaner technologies. An example is the conversion of refuse collection packers from diesel to a dual-fuel system using liquefied natural gas and diesel. The air pollution reduction from each converted refuse collection packer was equivalent to taking 100 cars off the road. Even with these reductions, more can be done to reduce our reliance on petroleum products to meet environmental, financial and national security objectives.

For further questions, you may contact Linda Giannelli Pratt at LPratt@sandiego.gov or call 858-492-5088.

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